TMC Mobility Study

Steering Committee Meeting
September 17th, 2013

Texas Medical Center

PARSONS BRINCKERHOFF

Agenda

- Introductions
- Status of Task 5. City Mobility Planning Process
  - Study Objectives
  - Framework for City Mobility Planning Process
- Status of Task 6. Modal Analyses/Study Tasks
  - 6.1. Street Network
  - 6.2. Intersection/bottleneck Analysis
  - 6.3. Parking Access
  - 6.4. Emergency Vehicle Access
  - 6.5. Transit
  - 6.6. ITS
  - 6.7. Ped/Bike Connectivity
  - 6.8. Travel Demand Management
  - 6.9. Transportation System Management Strategy
  - Initial List of Project Concepts
- Updated Schedule

Task 5. Study Objectives & City Mobility Planning (CMP) Process

- The CMP identifies nineteen objectives
- Top priority for the TMC Mobility Study
  - Improve parking access and availability
  - Improve road network mobility
  - Reduce vehicular congestion
  - Improve multimodal safety
  - Improve pedestrian connectivity

Task 5. Study Objectives and CMP Process

- Handout – Study Objectives
  - For each CMP objective
  - Criteria related to TMC area
  - Performance measure related to TMC study

Task 6. Modal Analyses - Study Tasks

6.1. Street Network &
6.2. Intersection/bottleneck Analysis

- Existing Conditions Analysis completed
- Working with H-GAC to develop future year model forecasts
- Identified initial roadway project concepts based on existing deficiencies
- Identified initial list of short-term improvements such as turn-lane and signal optimization projects
- Future Year Analysis
  - Fannin Street Corridor Analysis
  - Systemwide Analysis
  - Refining Project Concepts

Initial List of Project Concepts

- Based on existing conditions analysis
- Future year analysis not yet conducted
- Projects categorized by mode and type
- Focus on primary study area only
- Secondary study area after future analyses

Initial List of Project Concepts
Roadway Projects Already Identified

- SH 288 Direct Connector to TMC
- IH 610 Direct Connector at Cambridge
- Almeda road widening to 6 lanes
- Widening of Almeda Bridge over Brays Bayou to 5 lanes

Initial List of Project Concepts
Roadways

- Grade separated split intersections options
  - Along Holcombe at Braeswood, Cambridge and Almeda (OR)
  - Along Old Spanish Trail at Braeswood, Cambridge and Almeda
- Widen Almeda to eight-lane facility from IH-610 to N. MacGregor Way
- Conversion to One-way Pair
  - University – Fannin to Main westbound
  - Dryden – Main to Fannin eastbound

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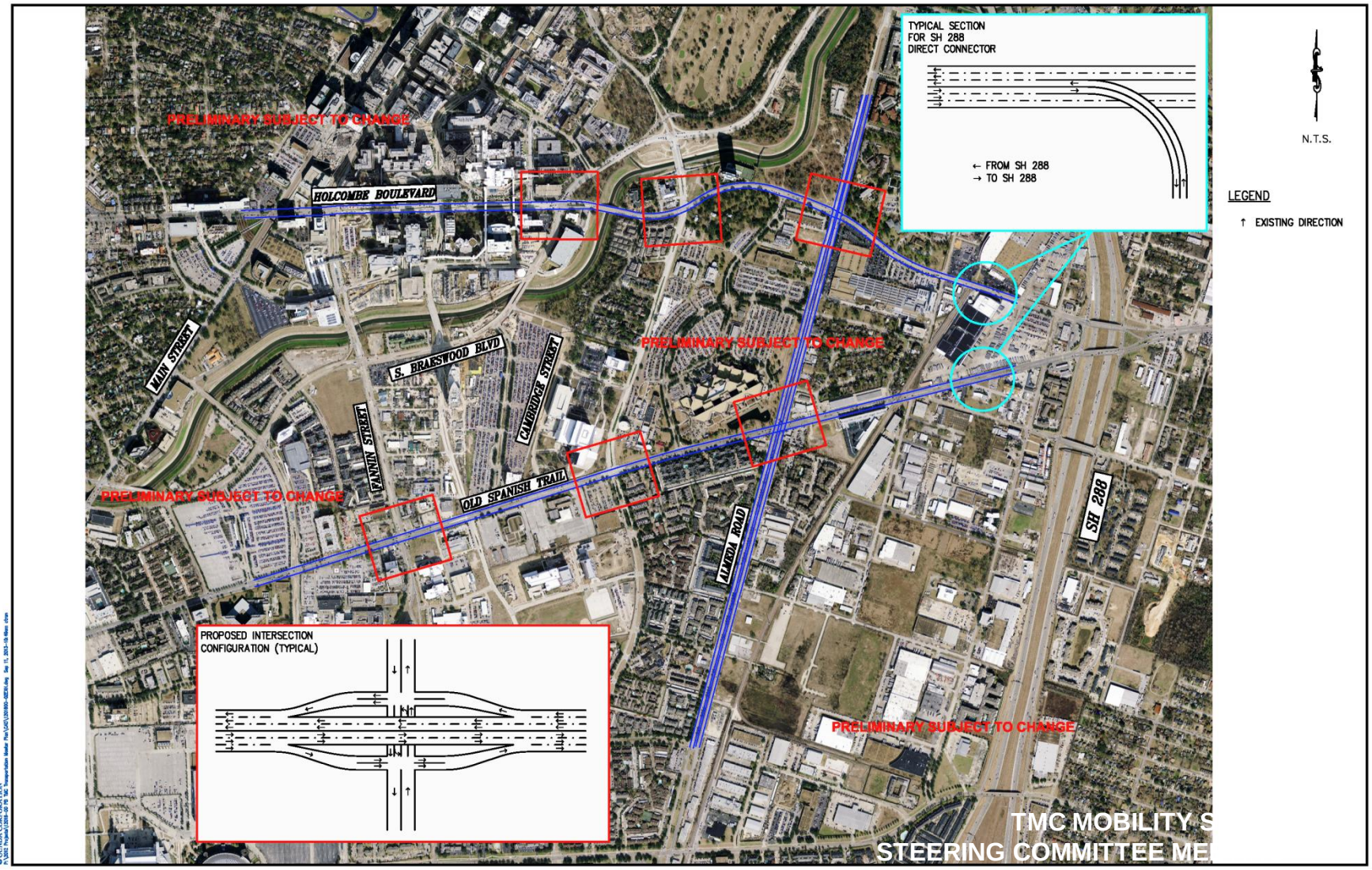
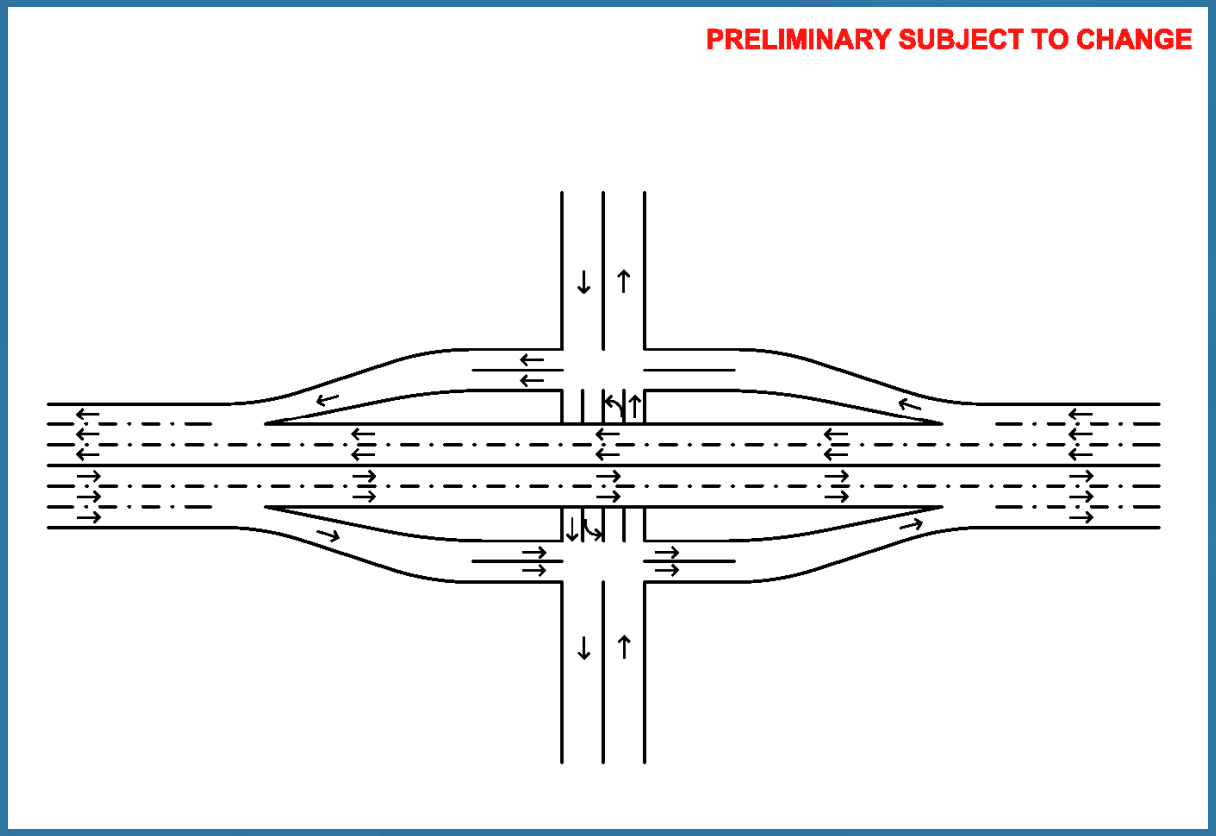
Proposed Grade Separated
Split Intersections



Proposed Grade Separated
Split Intersections

Along Holcombe or Old Spanish Trail

The drawing is only a sample typical section of the roadway without turn lanes in order to provide an idea of which traffic movement is grade separated.



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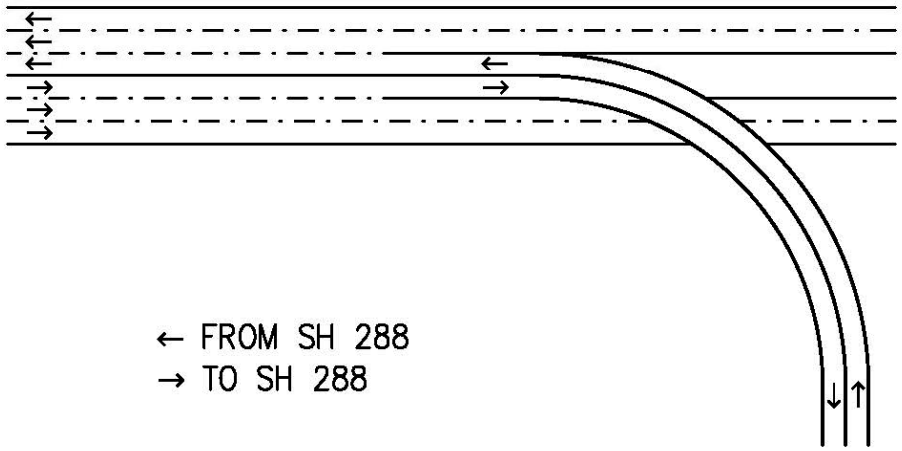
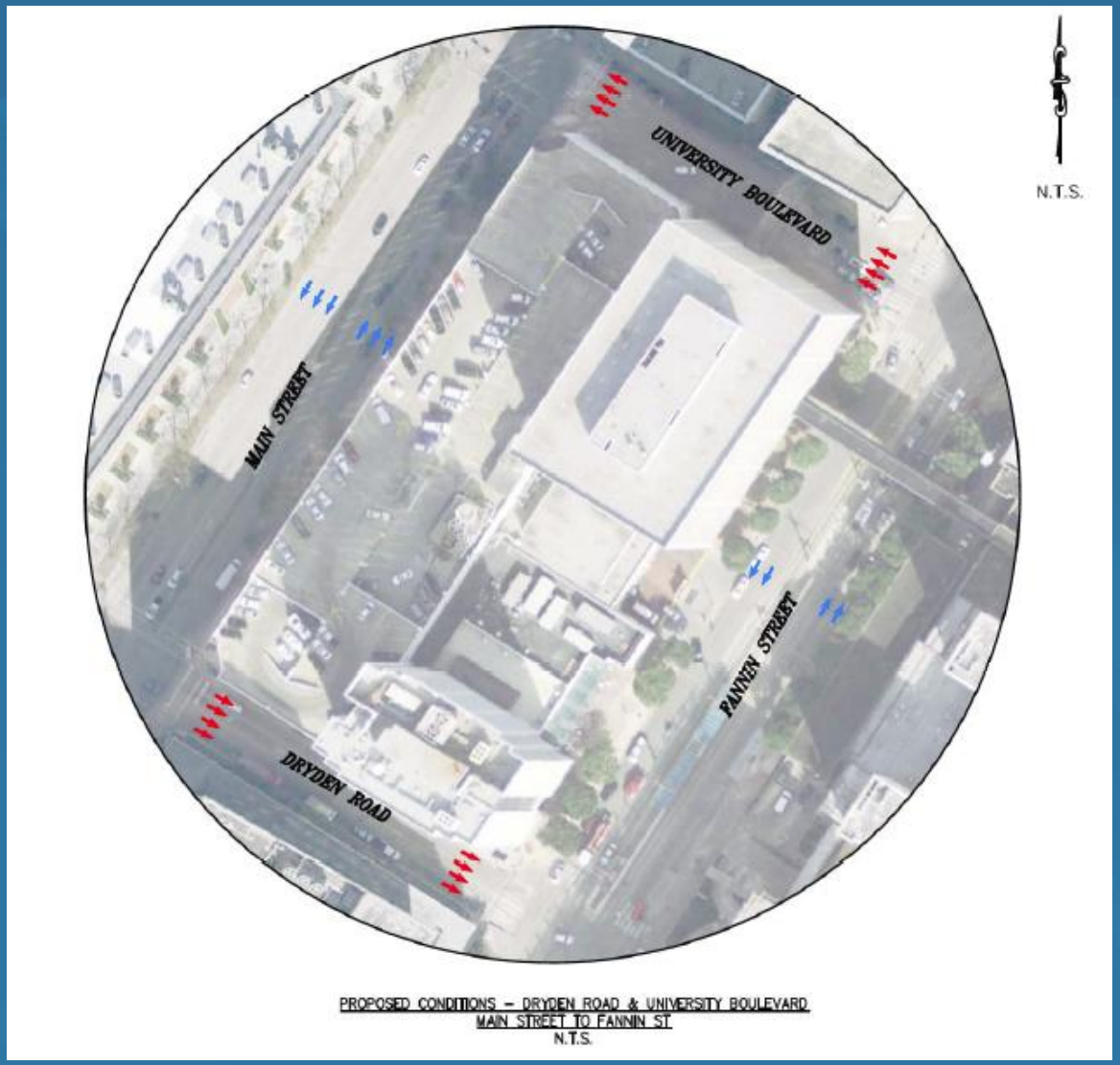
Proposed Direct Connector to Arterials

Direct Connector from/to SH 288

PRELIMINARY SUBJECT TO CHANGE



Proposed Conversion to One-way Pair



PROPOSED CONDITIONS – DRYDEN ROAD & UNIVERSITY BOULEVARD
MAIN STREET TO FANNIN ST.
N.T.S.

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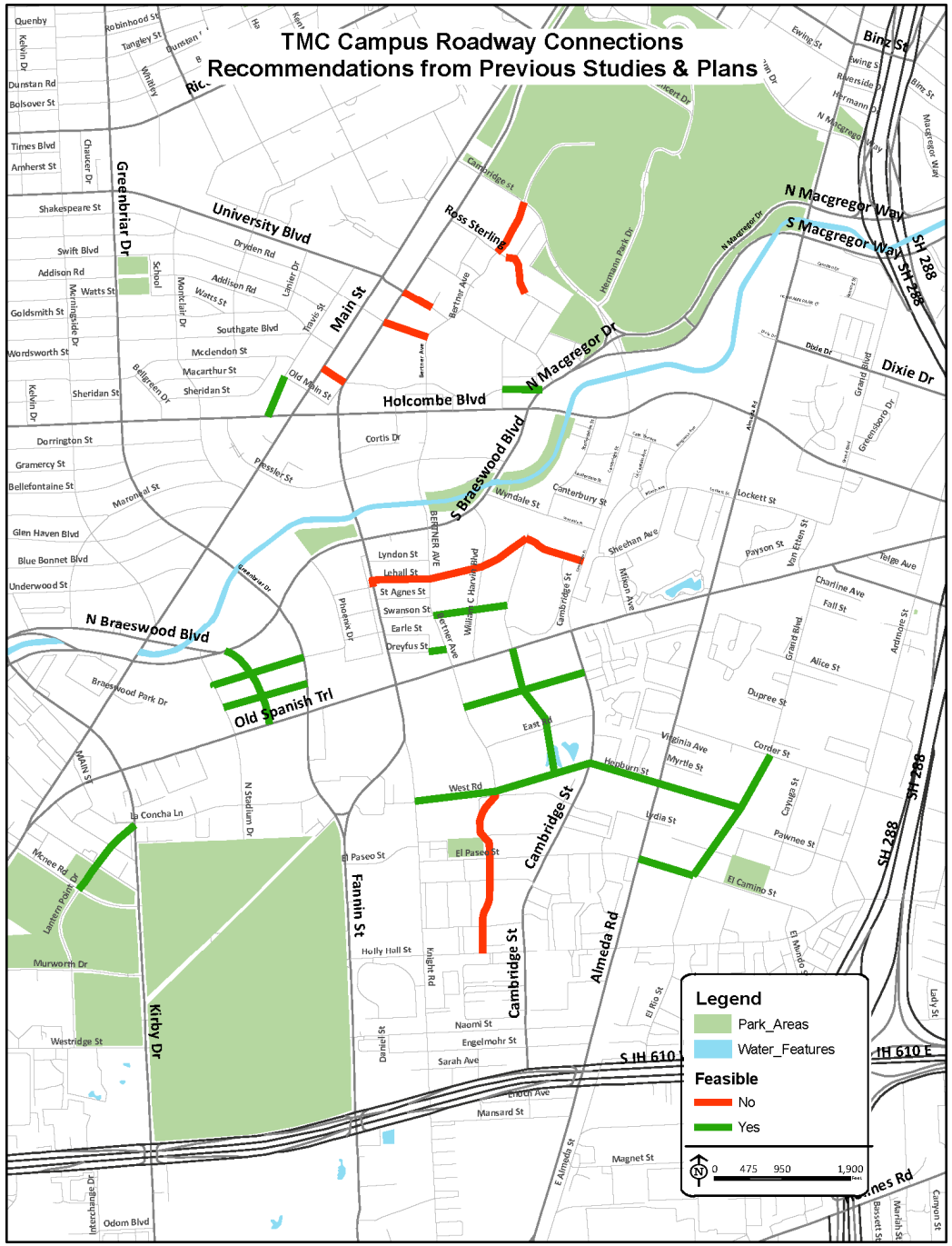
Initial List of Project Concepts
Intersections

- The list is not all-inclusive yet.
- In this initial round, we identified based on deficient existing conditions.
- We deliberately excluded some intersections on Fannin so that Fannin Street improvements can be part of “Fannin Street Corridor Analysis” which has just begun.
- Intersection turn-lane improvements Identified
  - Main at Cambridge
  - Fannin at Holcombe
  - Main at Holcombe
  - Almeda at Holcombe
  - Almeda at OST
  - OST at SH 288 NB Frontage Rd



Initial List
Campus Connections

The Campus connections list was composed by merging such recommendations from all previous TMC studies and plans.

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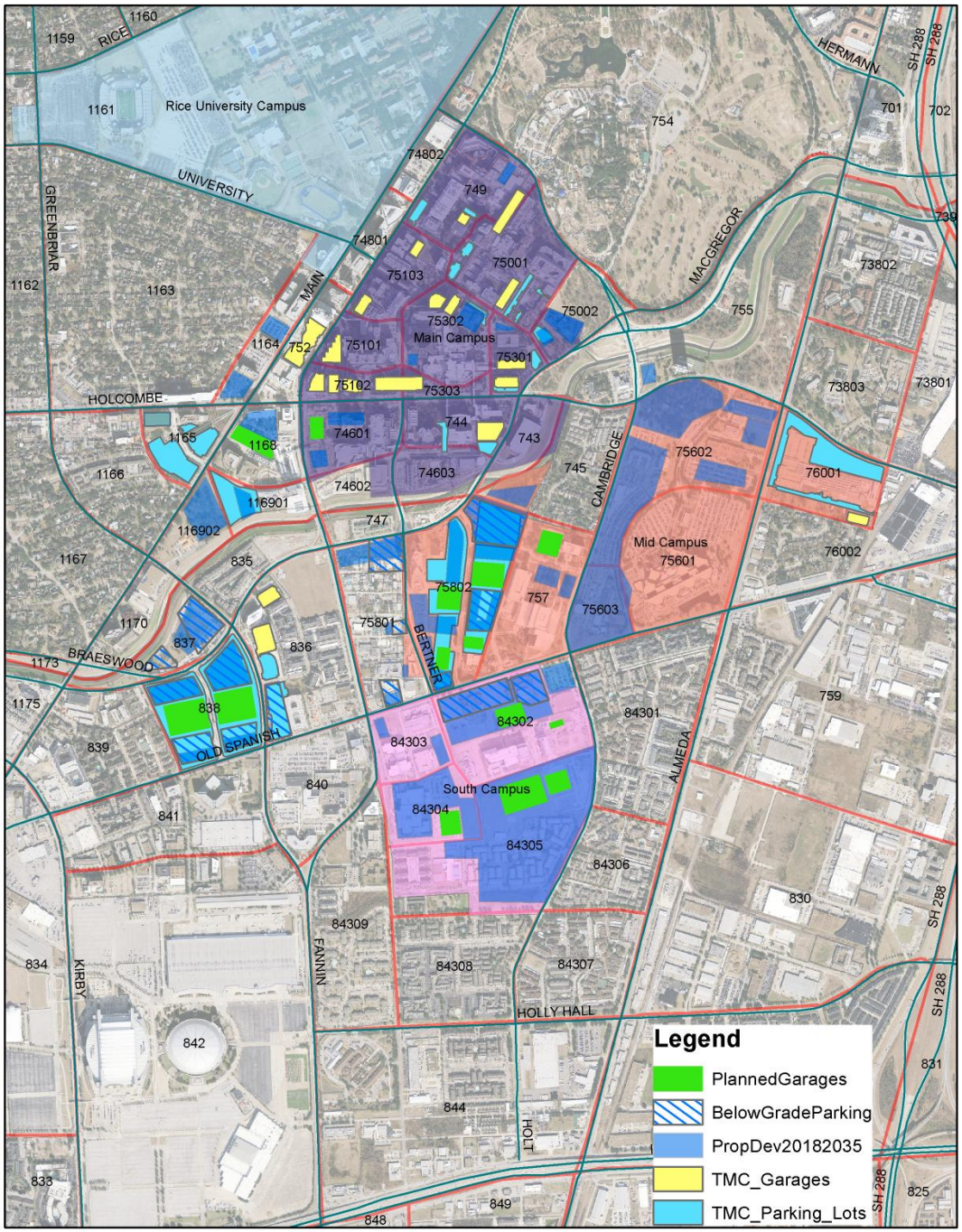
6.3. Parking Analysis

- Status
  - Existing conditions analysis completed
  - Identified future developments in TMC and planned parking garages/lots
  - Estimated future parking demand
  - Identified an initial list of project concepts
  - Analysis of garage entrance and exit issues underway (part of Fannin Street Corridor)



Planned Parking Facilities for New Developments

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Initial List of Improvements
Parking

- Additional Satellite Parking
  - At Gateways to TMC
- Parking Facilities Management
  - Incorporate ITS Solutions
    - Electronic parking guidance signs
    - Display space availability
    - Improved mobile app
  - Alternative Parking Payment Solutions
    - Parking Mobile App
    - EZTag for payment

Initial List of Project Concepts
Parking

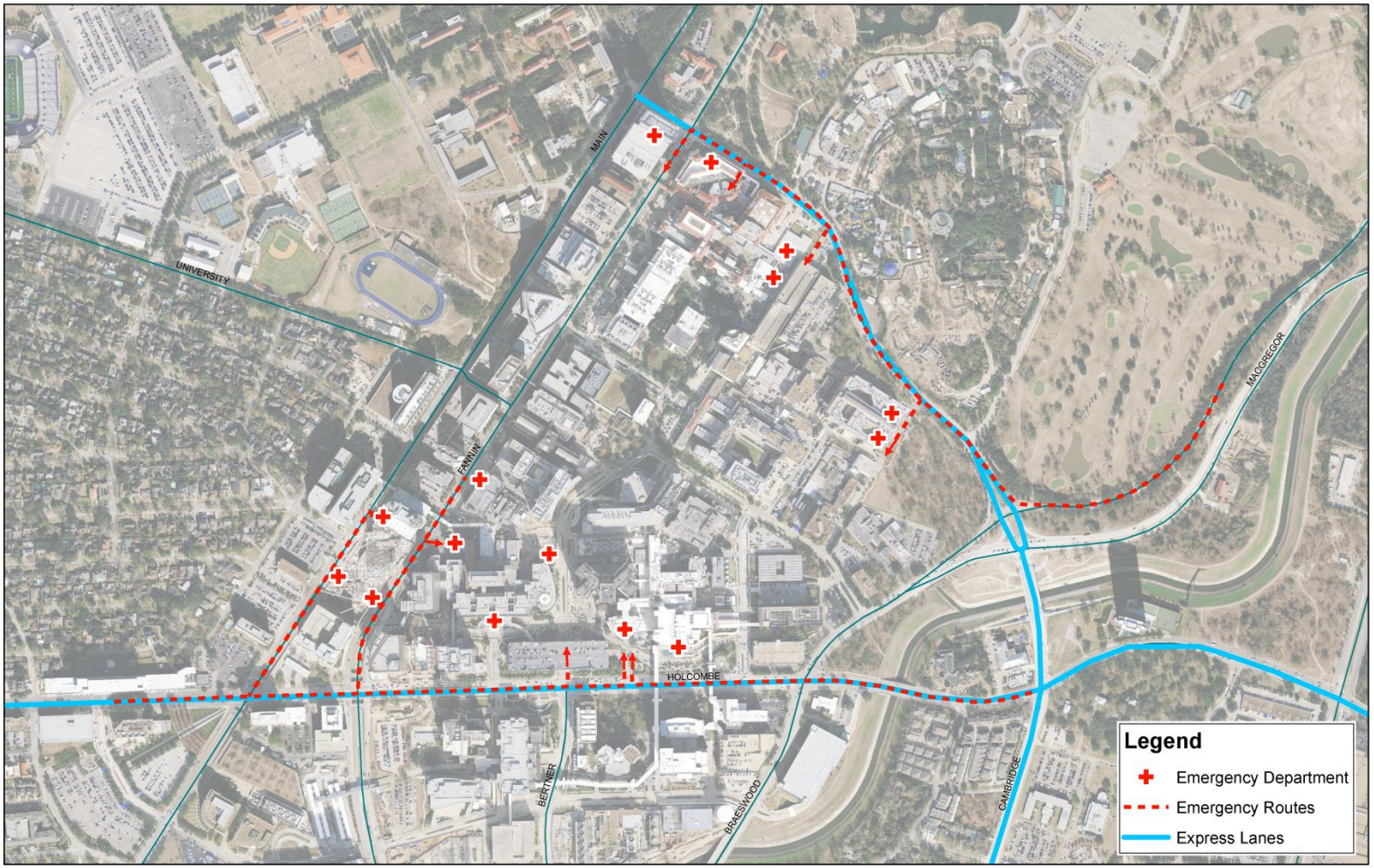
- Remote Satellite Parking Needs
  - South campus vicinity
- Parking Facilities Management
  - Incorporate ITS Solutions
  - Electronic parking guiding signs
  - Display lot availability
  - Improved Mobile App
  - Electronic parking guiding signs
  - EZ tag for parking payment

6.4. Emergency Vehicle Access

- Status
  - Identified emergency vehicle access issues during stakeholder interviews
  - Developed plans for designated emergency routes
  - Waiting for future conditions analysis and initial screening of projects prior to recommendations

Initial List of Project Concepts

Emergency Routes



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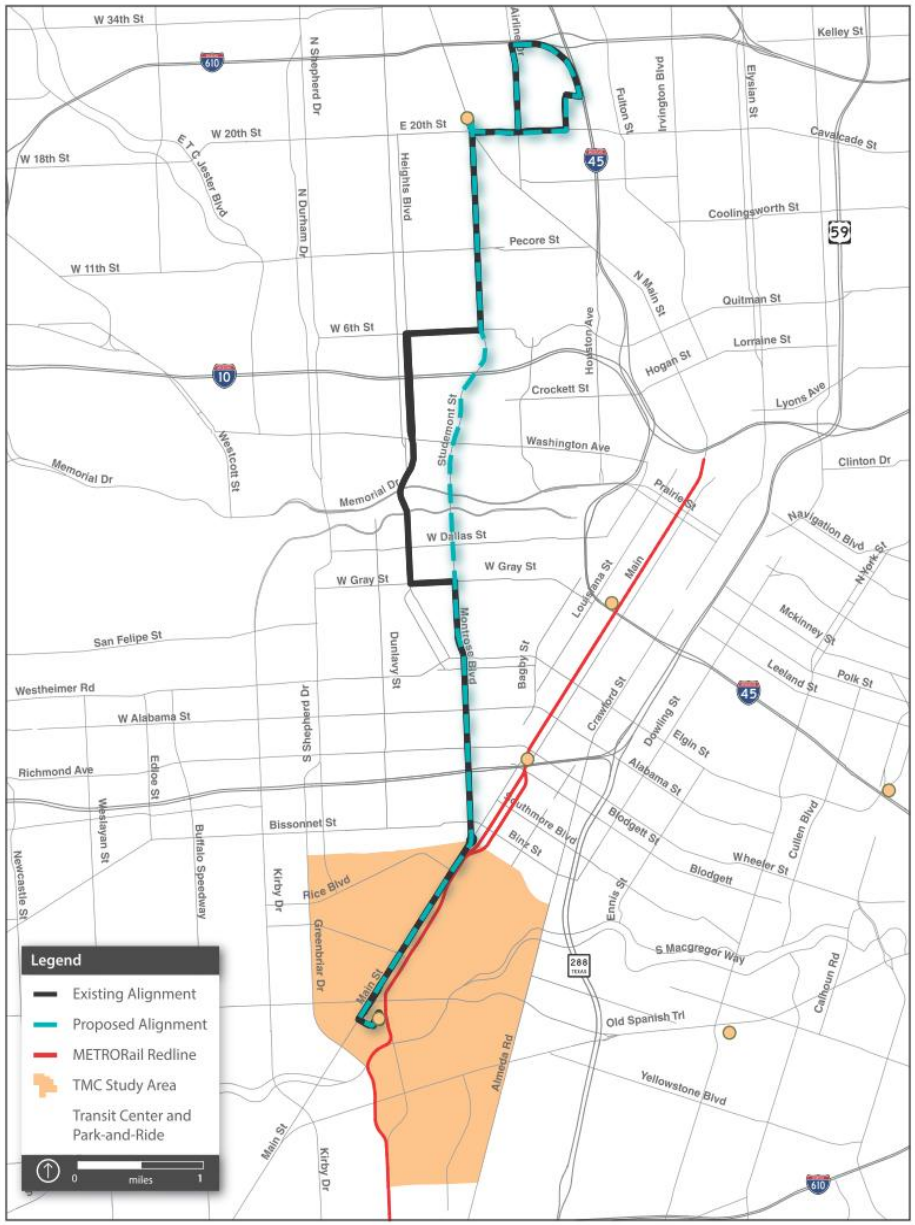
6.5. Transit

- Status
  - Existing conditions assessment completed
  - Identified initial list of project concepts
  - LRT options to be identified with Fannin Street Corridor Analysis

Initial List of Project Concepts
Transit Bus

- Metro
  - Re-align route 34 and improve headways.
  - Re-route peak-direction route 292 service via Bellaire – Holcombe between US 59 and the Medical Center
  - Extend route 402 into the TMC main campus or to the VA Medical Center; consider combining routes 402 and 426.
  - Retain the 26/27 routing as it is; modify route 426 to include service to VA Medical Center. Budget permitting, add midday service on route 426. Consider combining route 426 peak-period service with route 402.

Proposed Re-routing of Route 34 Montrose



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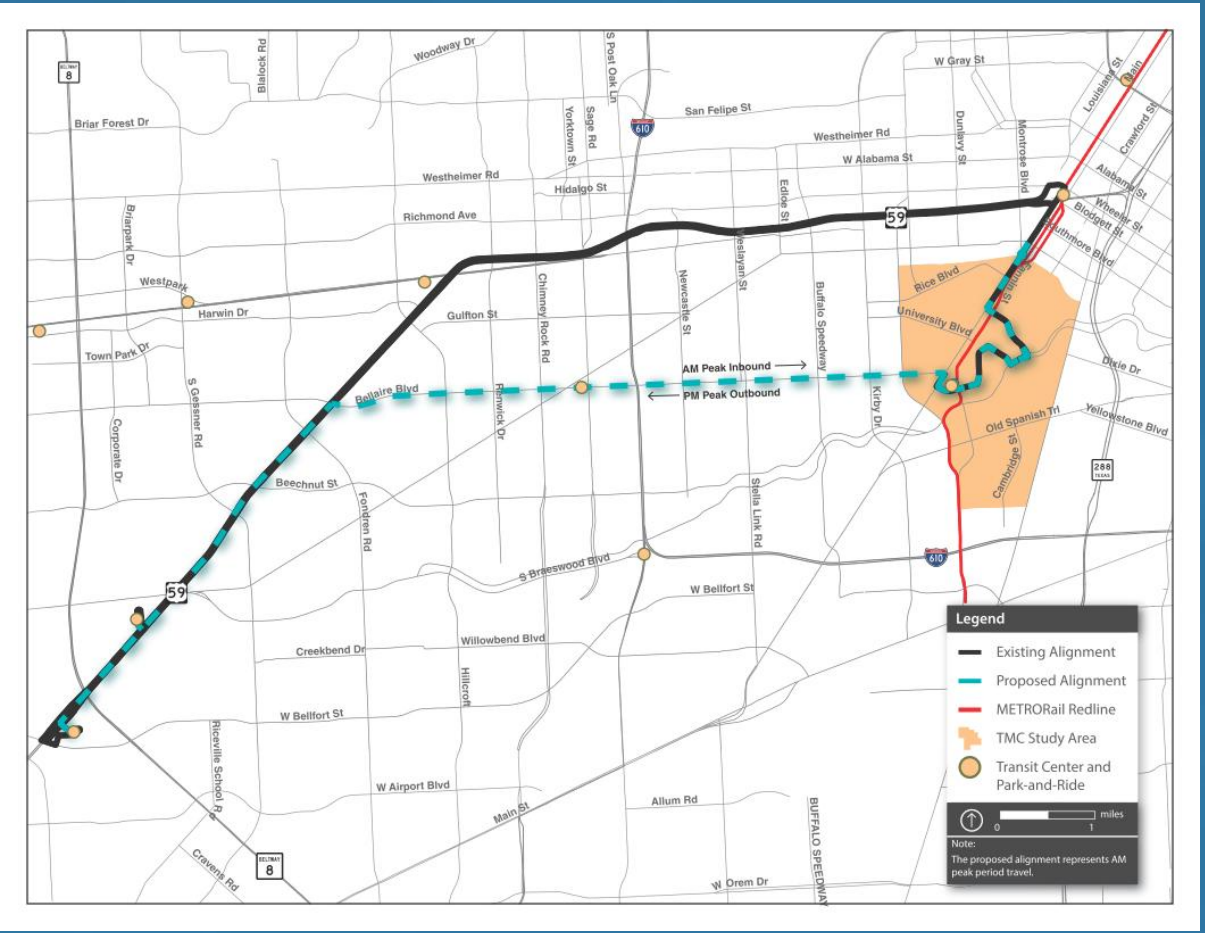
Proposed Re-routing of Route 292



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Further Recommendations being Analyzed

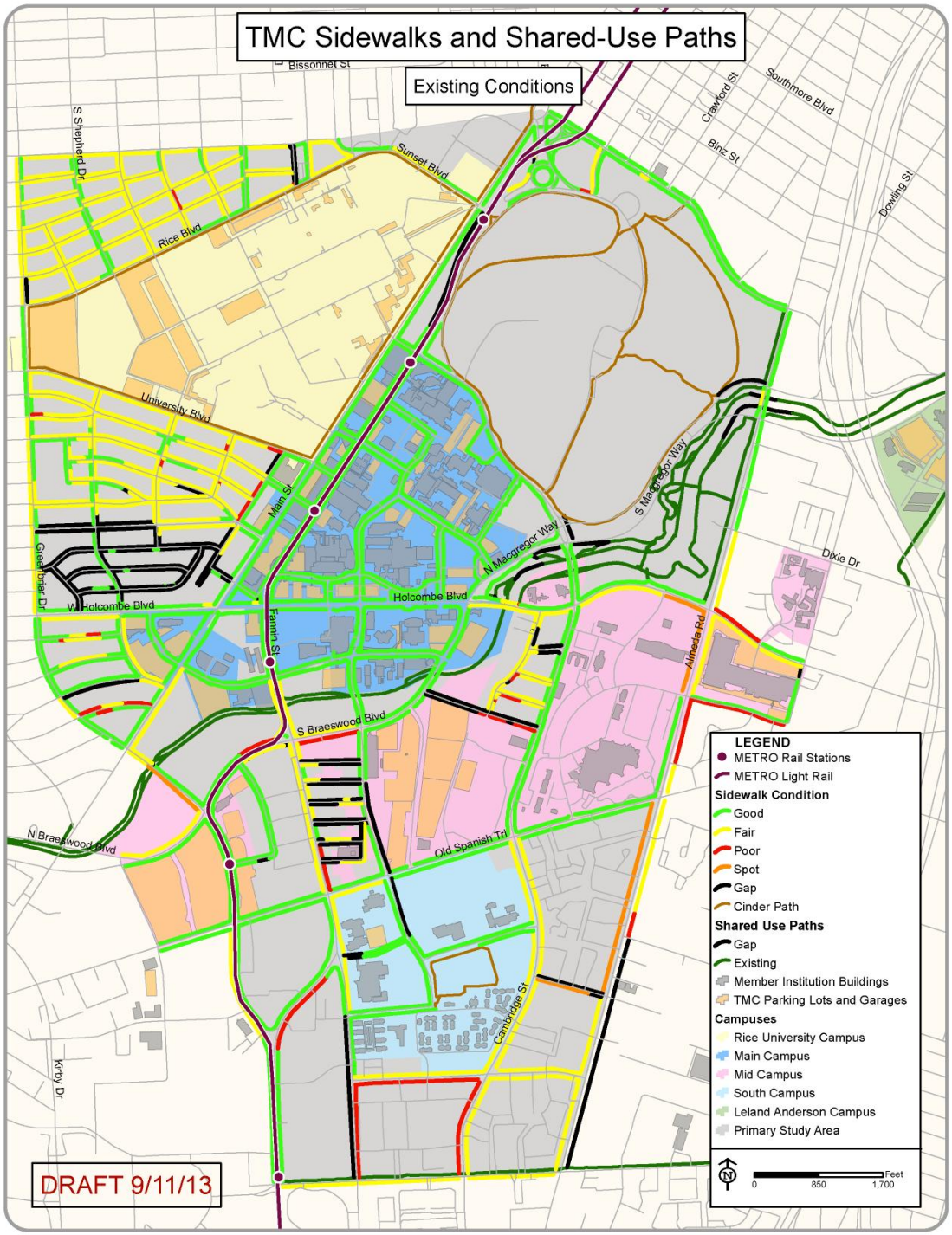
- Commuter Rail/BRT
- Ft. Bend County Transit
- Campus Shuttles

6.6. Intelligent Transportation Systems (ITS)

- Status
  - Identified some initial concepts to help maximum utilization of Parking facilities
- Display of space availability at garage entrance and at each parking level
- Electronic Parking Guidance Signs (Inside Garage and On Street)
- Space Reservation before visit using a Mobile App
- EZ Tag usage for payment/exit

6.7. Ped/Bike Connectivity Analysis

- Status –
  - Existing conditions gap analysis completed
  - Identified locations of new sidewalks based on new developments and stakeholder input
  - Developed prioritization criteria
  - Identified initial list of project concepts
  - Analysis for new skywalks and intersection improvements for pedestrian projects underway



Existing Bikeways and Sidewalks

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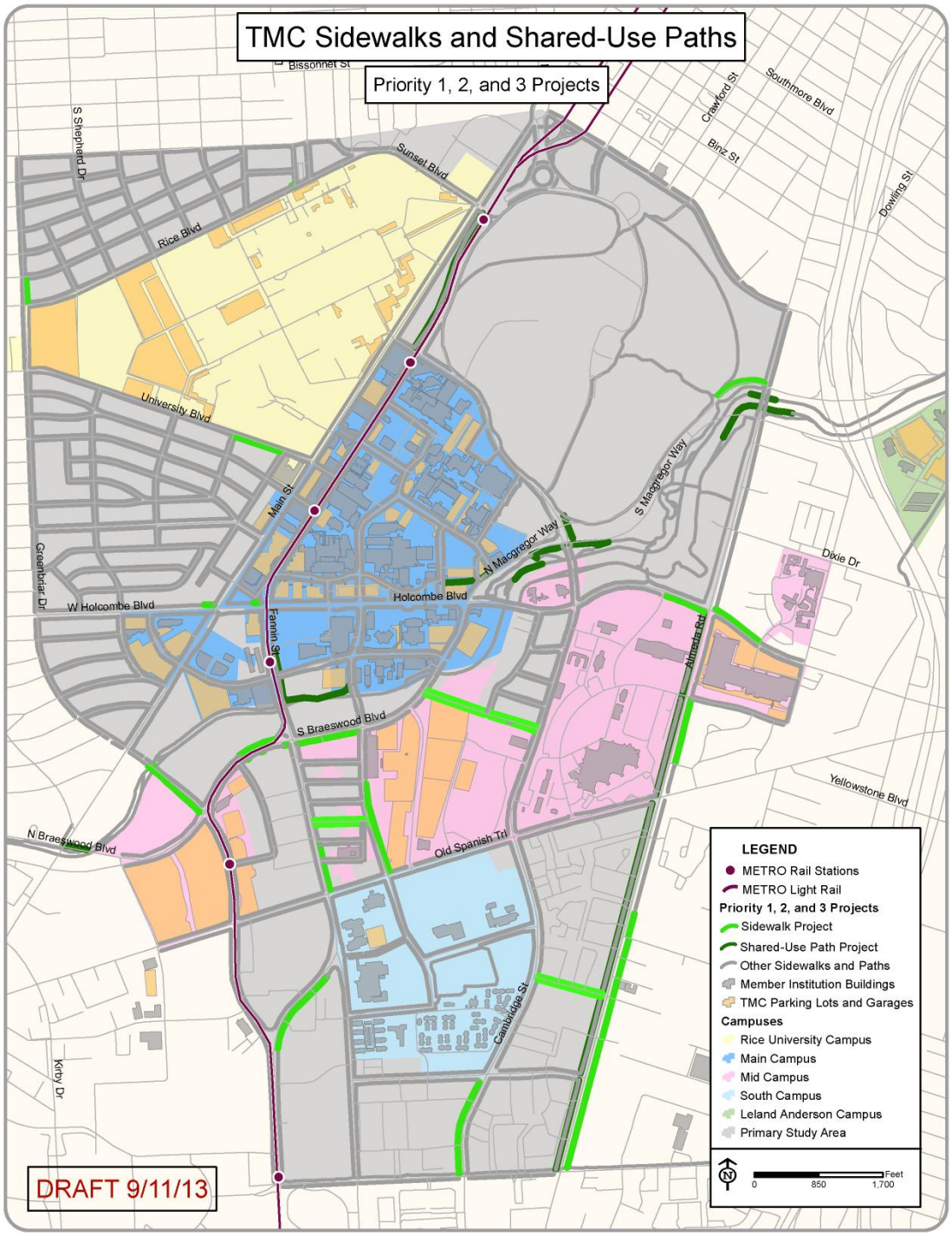
Ped/Bike Facilities Prioritization Criteria

Priority	Criteria
Shared-Use Paths	
1	Closes critical gap in network
2	Enables improved routes and connections
3	Upgrades connections that are already possible but not ideal
Sidewalks	
1	Completes sidewalks along all thoroughfares and collectors
2	Upgrades sidewalks along to thoroughfares and collectors to be easily passable (especially by handicapped)
3	Connects existing sidewalks , previously recommended
Intersection Accessibility	
1	Makes pedestrian facilities along all thoroughfares, collectors, and Type A streets accessible
Signs and Striping Bike Projects	
1	Improves access to heart of Main Campus
2	Improves access to other parts of Primary Study Area
Skywalks	
1	Connects high-pedestrian traffic facility to heart of TMC



Initial List of Proposed Bikeways and Sidewalks

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Initial List of Project Concepts
Bikeways and Sidewalks (first priority)

Almeda	Construct new trail segment under Almeda to the north side of Brays Bayou to close existing gap
Cambridge	Shared-use path will be constructed east of Cambridge to close the gap and bridge connection along the north side of Brays Bayou
West of Cambridge	Shared-use path will be constructed west of Cambridge to close the gap along the north side of Brays Bayou
NE of Cambridge	New path will be constructed to connect Brays Bayou and the Herman Park jogging trail and provide continuous sidewalks along Cambridge.
East side Alameda	Sidewalk will include ten new curb ramps. From Corder Street northbound to the first driveway at 7205 Almeda, replace 320 ft of bad sidewalk. Segment will include two new curb ramps.
North side N Mac Gregor	Complete shared-use path to connect the sidewalk and shared-use path along the west side of Almeda to the Herman Park Jogging trail along N MacGregor.
East side Bertner	Sidewalk north of OST along the east side of Bertner Ave including two new ramps.
West side Fannin	Proposed shared-use path from Cambridge to Sunset. Existing sidewalk will be removed. This segment is planned to be completed with a crushed granite path as part of the Hermann Park Grand Gateway project
East side Greenbriar	Sidewalk on the east side of Greenbriar between Rice and Bolsover

Initial List of Project Concepts
Bikeways and Sidewalks (second priority)

West side Almeda	Along the west side of Almeda between Holly Hall and Holcombe, a shared-use path is suggested. The path will be connected to the existing path along Almeda north of Holcombe.
South side Holcombe	Replacement of sidewalk along the south side of Holcombe between Ringness and Alameda
North side of Holcombe	On the north side of Holcombe between Almeda and Grand old sidewalk to be repalced. Two curb ramps will be replaced. The placement of streetlights currently obstructs the sidewalk; repositioning said streetlights may be necessary to comply with ADA and would add cost.
West side Cambridge	Along the west side of Cambridge from El Paseo to Holly Hall old sidewalk is to be removed and new to be built. Two curb ramps will be replaced.
East side of Fannin	Along the east side of Fannin between Greenbriar and Knight the current sidewalk is to be removed and rebuilt. Two curb ramps will be replaced.
West side Greenbriar	Along the west side of Greenbriar from S Braeswood to S Main segments of the sidewalk require spot fixes. The sidewalk fixes will be built at existing sidewalk width. Includes west end of bridge on north side of Greenbriar.
North side S Braeswood	Along the north side of S Braeswood between Fannin and Phoenix the sidewalk is in poor condition and inadequate along a transit corridor.Sidewalk needs to be removed and replaced
South side S Braeswood	Along the south side of S Braeswood from Fannin to Phoenix there are three major gaps. Sidewalk is needed for gap closures. One new curb ramp is needed for the project.

Initial List of Project Concepts
Bikeways and Sidewalks (second priority)

South side S Braeswood	The sidewalk along the south side of Braeswood between Fannin and Bertner is currently in poor condition. The project will remove existing sidewalk and replace with 825 ft of new sidewalk built at 6 ft. Two existing curb ramps will be replaced.
North side Rice	The sidewalk crossing the alley on the north side of Rice Blvd needs spot fixes.
Brays Connections to Fannin and Bertner	A modified ramp connection from the Brays Bayou trail to the east side of Fannin and a new ramp connection to the west side of Bertner are recommended.
Shared use path- Bayou Gap over drainage channel	Along Brays bayou, west of Cambridge and north of Holcombe, sits Harris Gulley. Harris Gulley creates an interruption in the trail along the north side of Brays bayou. With the closure of the Cambridge west gap, the area is passable by slight detour. 450 ft of shared-use path built at 10 ft are required to close the gap over Harris Gulley.
Shared use path- south side Brays Bayou under Almeda	Completion of the lower bayou trail under Almeda on the south side of the bayou.

Initial List of Project Concepts
Task 6.8. Travel Demand Management

- Increased incentives to vanpool operators/commute bonuses
- Preferential carpool parking
- Increase SOV parking rates
- Guaranteed ride home
- Increased bicycle parking and shower/change facilities

Initial List of Project Concepts – Travel Demand Management

TDM Strategy	Existing TMC Provisions	Potential Enhanced TDM Strategies
Financial Incentives	-Employees using METRO bus or vanpool receive pre-tax incentives -Subsidies for bus passes	Bicyclist receive an annual free on-site bicycle tune-up
		Carpoolers receive free parking and/or preferred spaces
		Commute bonuses for using alternate modes and increase rates for SOV parking
		Additional Incentives for vanpool drivers, bookkeepers, and back-up drivers
		Pedestrian subsidies
Provision of Transportation Services	Internal campus shuttle service provided by TMC and MD Anderson	Expanded inner campus free shuttle for patients and employees
		Guaranteed-Ride-Home to all alternative commuters to ensure that they can get home in case of unexpected events
		On-site flexcar: Low emission, fuel efficient vehicles available for an hourly rate that includes gas, insurance, and maintenance
Employer or Institutional Support Actions	-Ride Match Program to connect employees and help finding alternative commuting options -Transportation fairs -Flexible work hour programs	Sheltered and secure bicycle parking and free bike safety checkup
		Enhanced transit and rideshare written and on-line information
		Lockers and showers provided for bicycle riders
		Bike repair station available
		Offer umbrellas to pedestrians on an annual basis
		Covered motorcycle parking and subsidies
		Increased application of staggered work hours and telecommuting

Committee Involvement

- Facilitate Data Collection - Complete
- Identify Issues and Needs - Complete
- **Review of Goals and Objectives and Evaluation Framework**
- **Identify fatal flaw with concepts listed in the preliminary list of projects**
- **Identify if some project concepts should be removed and if new ones should be added for further analysis**
- Review of LRT Corridor Assessment
- Identify and Evaluate System Alternatives
- Review Draft Mobility Plan

Updated Schedule

Regional Modeling Results	November 2013
Tech Memo Alternatives Analysis & Final Project List	January 2014
Second Public Meeting	February 2014
Final Report	April 2014
* 2 months delay	

Questions

Thank you!